UNITED STATES PATENT AND TRADEMARK OFFICE

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>10/05/2005</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-28</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-28</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☒ All   b) ☐ Some *   c) ☐ None of:

      1. ☒ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>10/05/05-04/24/07</u>.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____ .

DETAILED ACTION

1.   Claims 1-28 are presented for examination.

Claims 1-26, are considered as the statutory subject matter. As per claims 1-15 are the

method claims which transform the underlying subject matter to a different state.

Similarly, claims 16-26 are the device claims which are tied with the computer processor

and memory. Therefore, these two sets of claims fulfill the requirement of the statutory

subject matter.

Information Disclosure Statement

2.   The information disclosure statement (IDS) submitted on 10/05/2005, and

04/14/2007 has been considered. The submission is in compliance with the provisions

of 37 CFR 1.97. Form PTO- 1449 is signed and attached hereto.

Priority

3.   Acknowledgment is made of applicant's claim for foreign priority under 35

U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. Europe

03100946.7, filed on 8 April 2003. Receipt is acknowledged of papers submitted under

35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Oath/Declaration

4.   The oath filed on 10/05/2005 complies with all the requirements set forth in

MPEP 602 and therefore is accepted.

Drawings

5.   The drawings filed on 10/05/2005 are accepted.

Specification

6.   The specification filed on 10/05/2005 is accepted.

Claim Rejections - 35 USC § 1 O1

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or
composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject
to the conditions and requirements of this title.

7.   Claim 27-28 are rejected under 35 U.S.C. 101 based on Supreme Court

precedent and recent Federal Circuit decisions, a 35 U.S.C § 101 **process must (1) be**

tied to a particular machine or (2) transform underlying subject matter (such as

an article or materials) to a different state or thing. In re Bilski et al, 88 USPQ 2d

1385 CAFC (2008); Diamond v. Diehr, 450 U.S. 175, 184 (1981); Parker v. Flook, 437

U.S. 584, 588 n.9 (1978); Gottschalk v. Benson, 409 U.S. 63, 70 (1972); Cochrane v.

Deener, 94 U.S. 780,787-88 (1876).

Claims 27, and 28 are directed to non-statutory subject matter. **"Media signal",**

and "Recorded medium" is reasonably interpreted by one of ordinary skill as just

software, it is a system of software, per se. According to the specification of the present

application (paragraph, 0027) the "recoded medium" comprises the "media signal"

which is just a carrier wave not any hardware. The computer product is not tied to a

particular machine and do not perform a transformation. Claim to a data structure per se

held nonstatutory (Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760). Such claimed

data structures do not define any structural and functional interrelationships between

the data structure and other claimed aspects of the invention which permit the data

structure's functionality to be realized. Similarly, computer programs claimed as

computer instructions per se, i.e., the descriptions or expressions of the programs, are

not physical "things." They are neither computer components nor statutory processes,

as they are not "acts" being performed. Such claimed computer programs do not define

any structural and functional interrelationships between the computer program and

other claimed elements of a computer which permit the computer program's

functionality to be realized. Accordingly, it is important to distinguish claims that define

descriptive material per se from claims that define statutory inventions. So, it does not

appear that a claim reciting software with functional descriptive material falls within any

of the categories of patentable subject matter set forth in § 101.

Claim Rejections - 35 USC § 102

8.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by
> another filed in the United States before the invention by the applicant for patent or (2) a patent
> granted on an application for patent by another filed in the United States before the invention by the
> applicant for patent, except that an international application filed under the treaty defined in section
> 351(a) shall have the effects for purposes of this subsection of an application filed in the United States
> only if the international application designated the United States and was published under Article 21(2)
> of such treaty in the English language.

9.   Claims 1-3, and 5-28 are rejected under 35 U.S.C. 102(e) as being anticipated by

Cheng et al hereafter Cheng (US patent 7,047,187).

10.   As per claim 1, Cheng discloses method of adding a fragile

watermark (WM) to a media signal (S) (fig. 6, elements 146, 150)

comprising at least one set of audio samples of digital audio

information (fig, 7, elements 156, 160, col. 2, lines 1-16),

comprising the steps of: providing a buried data channel (40,

42, 44, 46) in the audio samples of the media signal, (step 60)

(col. 3, lines 61-67, col. 6, lines 13-15, col. 8, lines 42-46,

audio packet is hidden in the audio data stream for a channel of

audio clip with sample rate), and providing a fragile watermark

in at least some of the audio samples, (step 66), wherein the

fragile watermark is provided in or in coding related to the

buried data channel (col. 2, lines 1-27, col. 4-25, lines 60-67,

Fragile watermark is embeds into the host signal audio sample).

11.   As per claim 2, Cheng discloses method wherein the step of

providing a fragile watermark comprises inserting the fragile

watermark in the buried data channel (44) (col. 6, lines 5-24,

col. 27-44, **fragile watermark embeds in the audio data channel**).

12.   As per claim 3, Cheng discloses method including the steps of

generating check information (46) related to the fragile

watermark, (step 62), and inserting the check information

related to the fragile watermark into the buried data channel,

(step 66) (col. 8, lines 14-25, col. 9, lines 44-58, **the embedded bits of the watermark are inserted in the audio data**).

13.   As per claim 5, Cheng discloses method including the step of inserting synchronisation and allocation information (40) in the buried data channel, (step 66), which information enables extraction of data in the buried data channel (col. 4, lines 3-33, col. 5, lines 42-65).

14.   As per claim 6, Cheng discloses method wherein the step of providing a fragile watermark comprises providing a frequency variation of the spectral shape of the output audio samples having the buried data channel (col. 3, lines 61-67, col. 8, lines 27-42).

15.   As per claim 7, Cheng discloses method wherein the frequency variation is provided through varying the spectral shape of dither to be inserted in the buried data channel (col. 1, lines 59-67, col. 46-67).

16.   As per claim 8, Cheng discloses method including the steps of combining the spectrum of the dither with a desired masked error spectrum for providing information for determining a noise shaped signal, providing said noise shaped signal and combining

the noise shaped signal with the audio samples (col. 7, lines
14-52).

17.   As per claim 9, Cheng discloses method wherein the frequency
variation is provided through varying the spectral shape of a
noise shaped signal and combining the processed noise shaped
signal with the audio samples (col. 8, lines 1-25, col. 8, lines
47-67).

18.   As per claim 10, Cheng discloses method of detecting a fragile
watermark (WM) in a media signal (S') (fig. 7, elements
166)comprising at least one set of audio samples of digital
audio information (fig, 7, elements 156, 160, col. 2, lines 1-
16), comprising the step of: detecting the presence or absence
of a correct fragile watermark in at least some of the audio
samples, (step 76) (col. 6, lines 4-25, **detects the fragile
watermark in the audio signal**), wherein the fragile watermark if
present is provided in or in coding related to an at least
originally provided buried data channel (40, 42, 44, 46) in the
audio samples (col. 3, lines 61-67, col. 6, lines 13-15, col. 8,
lines 42-46, **the fragile watermark is embedded in the hidden
audio data stream with the sample rate**).

19.   As per claim 11, Cheng discloses method wherein the audio samples
include a buried data channel and further comprising the step of
extracting data from the buried data channel, (steps 70, 72)
(col. 6, lines 5-24, col. 27-44, **extract the fragile watermark
from the audio data channel**).

20.   As per claim 12, Cheng discloses method wherein the step of
detecting a watermark comprises extracting the fragile watermark
from the buried data channel (44) (col. 6, lines 5-24, col. 27-
44, **detect the watermark in the audio data channel and extracts
from it**).

21.   As per claim 13, Cheng discloses method including the step of
extracting check information (46) relating to the fragile
watermark and determining if the watermark is a correct
watermark based on the check information (col. 8, lines 14-25,
col. 9, lines 44-58, **the embedded bits of the watermark are
inserted in the audio data**).

22.   As per claim 14, Cheng discloses method comprising the step of
extracting synchronisation and allocation information (40) from
the buried data channel and extracting data and detecting
fragile watermark based on this synchronisation and allocation
information (col. 4, lines 3-33, col. 5, lines 42-65).

23.   As per claim 15, Cheng discloses method wherein the fragile watermark is provided as a certain spectral variation of the audio samples of the media signal in relation to the originally provided buried data channel and further comprising the step of detecting the spectral shape of the audio samples in order to detect the presence or absence of a fragile watermark (col. 7, lines 14-52).

24.   As per claim 16, Cheng discloses device (10) for adding a fragile watermark (WM) to a media signal (S) (fig. 6, elements 146, 150) comprising at least one set of digital audio samples (fig, 7, elements 156, 160, col. 2, lines 1-16), comprising: a digital media source input for receiving at least one set of digital audio samples, a watermark forming unit (30) for providing a fragile watermark for use in at least some of the audio samples (col. 3, lines 61-67, col. 6, lines 13-15, col. 8, lines 42-46, **audio packet is hidden in the audio data stream where the watermark data can be embedded**), and a buried data inserting unit (14) arranged to provide a buried data channel (40, 42, 44, 46) in the audio samples of the media signal and to provide the fragile watermark in or in coding at least related to the buried data channel (col. 2, lines 1-27, col. 4-25, lines 60-67, **Fragile watermark is embeds into the host signal audio sample**).

25.   Claims 17-24 are listed all the same elements of claim 2-9 but in system form

rather than method form. Therefore, the supporting rationales of the rejection to claim 2-

9 apply equally as well to claim 17-24.

26.   As per claim 25, Cheng discloses device (15) for detecting a

fragile watermark (WM) in a media signal (S') (fig. 7, elements

166) comprising at least one set of digital audio samples (fig,

7, elements 156, 160, col. 2, lines 1-16), comprising: a fragile

watermark detector (56; 110, 112, 114) detecting the presence or

absence of a correct fragile watermark in at least some of the

audio samples (col. 6, lines 4-25, **detects the fragile watermark**

in the audio signal), wherein the fragile watermark if present

is provided in or in coding related to an at least originally

provided buried data channel (40, 42, 44, 46) (col. 3, lines 61-

67, col. 6, lines 13-15, col. 8, lines 42-46, **the fragile**

watermark is embedded in the hidden audio data stream with the

sample rate).

27.   As per claim 26, Cheng discloses device including a buried data

extracting unit (16) extracting data in a buried data channel in

the audio samples of the media signal (col. 6, lines 5-24, col.

27-44, **fragile watermark embeds in the audio data channel**).

28.   As per claim 27, Cheng discloses media signal (S') comprising at least one set of audio samples of digital audio information (fig, 7, elements 156, 160, col. 2, lines 1-16), comprising: a fragile watermark (WM) in at least one of the audio samples (col. 6, lines 4-25, **embeds the fragile watermark in the audio signal**), wherein the fragile watermark is provided in or in coding related to an at least originally provided buried data channel (40, 42, 44, 46) (col. 3, lines 61-67, col. 6, lines 13-15, col. 8, lines 42-46, **the fragile watermark is embedded in the hidden audio data stream with the sample rate**).

29.   As per claim 28, Cheng discloses recorded medium (120) comprising a media signal (S') including at least one set of audio samples of digital audio information (fig, 7, elements 156, 160, col. 2, lines 1-16), which signal comprises: a fragile watermark (WM) in at least one of the audio samples (col. 6, lines 4-25, **embeds the fragile watermark in the audio signal**), wherein the fragile watermark is provided in or in coding related to an at least originally provided buried data channel (40, 42, 44, 46) (col. 3, lines 61-67, col. 6, lines 13-15, col. 8, lines 42-46, **the fragile watermark is embedded in the hidden audio data stream with the sample rate**).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

30.   Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng et

al hereafter Cheng (US Patent 7,047,187) in view of Metois et al hereafter Metois (US

Patent 7,046,808).

31.   As per claim 4, Cheng discloses method of including the fragile

watermark.

Cheng does not expressly disclose the step of generating the

check as a one way function or with a relation to a robust

watermark associated with the fragile watermark.

However, in the same field of endeavor, Metois discloses the

step of generating the check as a one way function or with a

relation to a robust watermark associated with the fragile

watermark (col. 5, lines 46-67, col. 8, lines 57-67)

Accordingly, it would been obvious to one of ordinary skill in the network security art at

the time of invention was made to have incorporated Metois's teachings of robust

watermark associated with the fragile watermark with the teachings of Cheng, for the

purpose of suitably using the robust and fragile watermark in the audio signal `(col.`
`5, lines 46-67)`.

Conclusion

32.   Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Mohammad w. Reza whose telephone number is 571-
272-6590. The examiner can normally be reached on M-F (9:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, MOAZZAMI NASSER G can be reached on (571)272-4195. The fax phone
number for the organization where this application or proceeding is assigned is 571-
273-8300.

Information regarding the status of an application may be obtained from the Patent
Application Information Retrieval (PAIR) system. Status information for published
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more information about the PAIR system, see http://pair-direct.uspto.gov. Should you
have questions on access to the Private PAIR system, contact the Electronic Business
Center (EBC) at 866-217-9197 (toll-free).

/Nasser G Moazzami/   /Mohammad W Reza/

Supervisory Patent Examiner, Art Unit 2436   Examiner, Art Unit 2436